



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,318	01/23/2004	Qin-Yin Tong	247830US-20 CONT	4983

22850 7590 05/17/2006

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

GARCIA, JOANNIE A

ART UNIT PAPER NUMBER

2823

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,318

Applicant(s)

TONG ET AL.

Examiner

Joannie A. Garcia

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 138-197 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 149-160 and 168-181 is/are allowed.
- 6) ☒ Claim(s) 138-145, 161, 162 and 186-192 is/are rejected.
- 7) ☒ Claim(s) 146-148, 163-167, 182-185 and 193-197 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 138-145, 161, 162, and 186-192, are rejected under 35 U.S.C. 102(b) as being anticipated by Bower et al (U.S. Patent 5,503,704).

The rejection is maintained as stated in the Office Action mailed 10-19-05, and as stated below.

Applicant argues that Bower et al does not teach exposing, cleaning, and terminating, performed in order on the second surface of the substrate prior to the bonding step. However, the claims are not so limited. The exposing, cleaning, and terminating in order, prior to the bonding step are performed on the first surface of the substrate.

Applicant argues that Bower et al does not teach any cleaning step after the plasma activation prior to bonding. However, Bower et al discloses an ammonia plasma activation, which can be employed during deposition prior to cleaning, as well as at some later point in time, therefore, achieving a cleaning step after the plasma activation prior to bonding (Column 5, lines 34-37). Furthermore, Bower et al discloses that the steps and their sequence may vary without departing from the basic concepts disclosed (Column 4, lines 29-31).

Bower et al discloses a processing method, comprising exposing a surface of a substrate to a plasma (Abstract, and Column 5, lines 12-41), cleaning said surface after exposure to said plasma by removing contaminants from said surface (Abstract, and Column 4, lines 45-67), terminating said surface with a chemical species after said cleaning step by immersing said surface in an ammonia-based solution (Abstract, and Column 5, lines 12-22), bonding said

Art Unit: 2823

surface to a second surface of a second substrate after said terminating step (Abstract and Column 5, lines 23-32), wherein said exposing, cleaning and terminating steps, are performed in order, on said second surface of said second substrate prior to said bonding step (Column 4, lines 45-67, and Column 5, lines 12-41), and forming a bonding layer on said first and second substrates, and performing said exposing, cleaning, and terminating steps on a third surface of said bonding layer (Column 4, lines 45-67, and Column 5, lines 12-41).

Claims 146-148, 163-167, 182-185, and 193-197, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 149-160, and 168-181, are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2823

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joannie García whose telephone number is (571) 272-1861. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

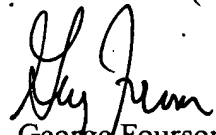
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JAG

May 12, 2006

GFourson
Primary Examiner



George Fourson
Primary Examiner
Art Unit 2823